

male and two females, Oroya, Peru, over 12,000 feet, May 7 and 8, 1914, on short herbage in Rio Mantaro valley bottoms above town (Townsend).

Black. Front with thin silvery pollen, tending to faint brassy shade. Face and cheeks with pale golden pollen. Occiput cinereous. Front, antennæ and occiput blackish, frontalia not so dark; face and cheeks yellowish in ground color. Moso-scutum thinly silvery, faintly showing four vittæ that are nearly equal. Scutellum dark testaceous, blackish on sides, tinged somewhat dark on disk. Abdomen wholly black, subshining, without trace of markings or pollen. The abdomen shows a faint metallic luster, a trace of which is also perceptible on the thorax. Front femora very faintly silvery on outside. Wings very dilute smoky throughout, no yellow but rather a blackish tinge on base, veins showing yellowish. Tegulae deeply smoky.

Holotype, No. 19221, U. S. Nat. Mus., female (TD4268). Allotype, male (TD4269). Paratype, female (TD4270).

The male reproductive system shows the long *vasa deferentia* characteristic of the Larvævorini and allied tribes, with very long accessory glands. The female system is characteristic of the same groups, the uterus being very long and truly straplike with eggs and maggots up to eight and ten parallel rows. The paratype at time of pinning showed four extruded white maggots, with black cephalopharyngeal skeleton, attached to larvipositor. The preuterus is of regular form, but bears on dorsal surface near base a pair of unequal saclike vesicles, of which the larger one may exceed in size the preuterus itself. This structure is unique in the Muscoidea so far as yet known.

SOME WEST INDIAN DIPTERA

By FREDERICK KNAB

The following notes and descriptions of new species have resulted from determination work. They are offered as a slight contribution to our knowledge of the highly interesting but neglected dipterous fauna of the Antilles.

Mallophora macquartii Rondani.

Mallophora scopifer Macquart (not Wiedemann), Dipt. Exot., vol. I, pt. 2, p. 89 (1838).

Mallophora macquartii Rondani, Nuovi Annali Sci. Nat. Bologna, ser. 3, vol. 2, p. 367 (1850).

Mallophora scopifera Bigot (not Wiedemann), in: de la Sagra, Hist. fis. de la Isla de Cuba, Spanish edit., vol. 7, p. 331 (1856).
Mallophora scopipeda Rondani, Arch. per la Zool., vol. 3, p. 46 (1863).

Mallophora macquartii Osten Sacken, Cat. Dipt. No. Amer., 2 edit., p. 78, 233 (1878).

Mallophora macquarti Snow, Kans. Univ. Quart., vol. 4, p. 186 (1896).

Mallophora scopipeda Aldrich, Cat. No. Amer. Dipt., p. 279 (1905).

Macquart, as early as 1838, detected that Cuban specimens were specifically distinct from the *Mallophora scopifer* described by Wiedemann from Brazil, but he failed to propose a new name for the species. This was done by Rondani, who, twelve years later, proposed the name *macquartii* for the Cuban form. After a lapse of thirteen years Rondani proposed another name, *scopipeda*, for the same form, evidently having forgotten his previous action. Osten Sacken had the name *macquartii* from Loew and was under the impression that it was a manuscript name; hence we find *scopipeda* given priority in the Aldrich catalog.

Mallophora macquartii, thus far, is known only from Cuba. There are before me two females and a male, all taken at Cayamas by Mr. E. A. Schwarz. The species may be best compared with the North American *Mallophora orcina* of Wiedemann. It agrees with this in the yellow-haired head, scutellum and anterior margin of the thorax; as in that species the abdomen is dorsally yellow-haired, black at tip, the fifth to seventh segments being black-haired. The Cuban species differs by the absence of black bristles from the mystax; the femora and tibiæ are ferruginous instead of black, and are pale yellowish-haired, only the apices of the tibiæ black-haired; the venter on the first four segments shows a medium line of rather loose, long, erect yellowish hairs, while in *orcina* the venter is wholly densely black-haired. In the male *macquartii* the front tarsi are dorsally whitish haired, while in the female they are all black. *Mallophora orcina* shows an entirely different sexual dichroism. In the female all the legs are wholly black-haired, while in the male the hind tibiæ are white-haired over a considerable portion of the lower sur-

face and the hind tarsi have the last three joints dorsally white-haired.

Tabanus hookeri, new species.

Eyes bare in the female, hairy in the male. Abdomen dorsally with three longitudinal series of pale markings. Wings clear, the posterior cells all widely open, the upper branch of the third vein not appendiculate.

Female: General color brownish gray. Frons broad, narrowing gradually toward the antennæ, yellowish gray; frontal callosity brown, roughly quadrate, as broad as high and contiguous with eyes, a narrow connected line reaching about one-third the way to occiput. Antennæ bright ferruginous; first joint with the dorsal apex black and with many short black hairs; third joint dorsally with a prominent but obtruse basal process, its apex and the annulate part of the joint black. Palpi yellowish white, with a few scattered black hairs. Face and cheeks clothed with white pollen and hair. Thorax dorsally dark gray and yellowish brown, the latter color mostly laterally and in two narrow subdorsal stripes; scutellum yellow brown tinged with gray; pleuræ grayish white and clothed with white hair; disk of thorax and scutellum clothed with white hair scales and fine black hairs. Abdomen dorsally blackish brown, a median series of yellowish brown contiguous triangular spots, narrow on anterior margins and broadened to posterior margins; on each side, half-way toward lateral margins, a series of broad oblique bars of the same color, touching both anterior and posterior margins of the segments, but not the lateral margins; extreme lateral margins with a narrow continuous brownish yellow stripe; the pale markings are overlaid with whitish hair-scales; venter pale ferruginous, tinted with pale gray at the sides, the seventh segment with short erect black bristles. Legs pale ferruginous, with pale gray pruinosity and whitish down, the anterior and middle coxæ dark, the front tibiæ blackened from just beyond the middle; tarsi blackish. Wings hyaline, the stigma long and brownish yellow. Halteres pale ferruginous, with creamy white knobs. The eyes show traces of two transverse purplish stripes. Length: Body, about 11 mm.; wing 9 mm.

Male: Eyes with the small facets forming a dark band along the lower margin, very broad posteriorly and tapering to a point above antennæ. Third antennal joint with the basal process hardly larger than in the female, but distinctly acute. Abdomen with the dorsal markings less distinct, the median stripe obsolete. Length: Body, about 11 mm.; wing, 8.3 mm.

Mayaguez, Porto Rico, 1 female, January 9, 1912 (C. W. Hooker), 1 male, October 24, 1914 (R. H. Van Zwaluwenburg).

Type, Cat. No. 19354, U. S. Nat. Mus.

Named in memory of the late C. W. Hooker. The species agrees with none of the descriptions of species previously reported from the West Indies.

Hyperalonia gargantua, new species.

Antennæ deep reddish brown to black, the style slightly shorter than the third joint. Head with the vertex dull black, the frons clothed mostly with pinkish brown scales and fine black hairs; posterior eye-margins white-scaled. Thorax blackish brown, anteriorly with a collar of erect maroon red hair-scales, followed by black ones; a large tuft of maroon red scales before roots of wings and another beneath posterior angles; tufts of the same color upon the coxæ; disk of thorax clothed with small appressed blackish scales, becoming pinkish posteriorly, at the sides and upon the scutellum. Abdomen dorsally with the first segment black-scaled; second with a broad band of white scales anteriorly, slightly narrowed toward the middle, where it is about half the width of the segment; the succeeding segments wholly black-scaled, the scales at the posterior margins of the segments touched with dull pink, on the margin of the sixth segment a few white-tipped scales. Venter dark, with long maroon red hair-scales at the sides, longest and most dense anteriorly. Femora dark reddish brown tinged with black, the tibiæ and tarsi black. Wings with four submarginal cells and three blackish bands similar to those in *H. cerberus* but less extensive. The first band is basal and involves the bases of the second basal and anal cells; the second band crosses the wing over the anterior cross-vein, involves the base of the discal cell, the apices of

the second basal and anal cells and the bases of the third and fourth posterior cells; the third band involves the furcation of the second vein, the posterior cross-vein, and sends a branch to the apex of the first posterior cell; several small detached spots occur outwardly on the veins, but there is no spot at the apex of the upper branch of the third vein. Length: Body, about 20 mm.; wing, 24 mm.

St. Elizabeth, Santa Cruz Mountains, Jamaica, altitude 1,500 feet, 1 specimen, October 14, 1899 (C. B. Taylor).

Type, Cat. No. 19355, U. S. Nat. Mus.

Nearest to *Hyperalonia cerberus* Fabricius, but differs by its much larger size, the more restricted black fasciae of the wings, black tibiæ, absence of white markings from the posterior portion of the abdomen and other details. The long red pubescence present at the sides of the venter in this species is absent in *cerberus*. In the wing of *gargantua* the clear spaces between the black fasciae reach forward to the first vein, while in *cerberus* the black fasciae are more or less confluent in the anterior region.

Heterostylum hæmorrhœicum (Loew).

Bombylius hæmorrhœicus Loew, Berl. Ent. Zeitschr., vol. 7, p. 300 (Centur. iv, species 46), 1863.

Bombylius semirufus Loew, Berl. Ent. Zeitschr., vol. 16, p. 78 (Centur. x, species 41), 1872.

A specimen in the U. S. National Museum collection bears the label "Grand Anse, Hayti, P. R. Uhler," and is evidently one of the original series from which the type of *Bombylius semirufus* was derived. The specimen is a typical *Heterostylum* in every respect; Loew compares the species with *Bombylius hæmorrhœicus*, which he had previously described from Cuba, and which therefore also belongs here. This view is supported by Loew's comparison of *hæmorrhœicus* with *Bombylius ferrugineus* Fabricius, which belongs to *Heterostylum*. In the descriptions of *hæmorrhœicus* and *semirufus* no tangible differences are apparent and both descriptions apply equally well to the specimen before me. While in the absence of Cuban material the synonymy cannot be made positive, it is at least highly probable and was already suspected by Loew himself.

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